

IN THE CLAIMS:

Applicant is amending Claims 1, 6, 8, 11, 12-14, and 16-17 and is adding Claims 18-67, as follows:.

1. (Once Amended) An individually or substantial individually molded member for use as a railroad tie, lumber or other structural member, comprising a mixture of:
 - from about [4%] 25% to about 55% of a thermoplastic polymer[.];
 - from about 4% to about 55% of a rubbery polymeric component; and[.]
 - from about 4% to about 55% of a reinforcing filler[;].
2. (Once Amended) A process for forming a molded member for use as a railroad tie, lumber or other structural member, comprising the steps of:
 - mixing materials comprising,
 - from about [4%] 25% to about 55% of a thermoplastic polymer[.];
 - from about 4% to about 55% of a rubbery polymeric component; and[.]
 - from about 4% to about 55% of a reinforcing filler;
 - injecting or extruding said mixture into a mold having at least one side [wall], said mixture at least partially fill[s]ing said mold [about said side wall], such that said mixture has at least one side surface [along said side wall] and an interior portion;
 - cooling said mixture whereby said at least one side surface is at least partially hardened[;], thereby at least partially forming a member;
 - removing said [mixture] member from said mold before said interior portion [of said mixture] is substantially hardened;
 - placing said [mixture] member within or about a cooling apparatus; and
 - rotating said [mixture] member about said cooling apparatus whereby said [mixture] interior is at least substantially hardened [forming said member].
6. (Once Amended) The method of Claim 2 wherein said materials each comprise from about [4%] 25% to 55% of said mixture.
8. (Once Amended) The method of claim 2 where in said mixture is heated by

frictional and/or compressive heating of said mixer.

10. (Once Amended) The method of Claim [2] 9 wherein said mixture is heated [from] to about 380 degrees to about 440 degrees.

11. (Once Amended) The method of Claim [2] 8 wherein said mixture is preferably heated [from] to about 400 degrees to about 420 degrees.

12. (Once Amended) An apparatus comprising:
a mold having at least one [a] side wall defining an interior portion and an injector port whereby an extrudable material may be injected [across] through said injection port into said mold[,];
a member [located about said mold] whereby said member is in sealable connection about said interior portion [of said side wall,];
said member capable of moving along said interior portion of said [side wall] mold whereby said member may adjustably control a density of said extrudable material.

13. (Once Amended) A process for forming a molded member for use as a railroad tie, lumber or other structural member, comprising the steps of:
mixing [,] portions from about [4%] 25% to about 55% of a thermoplastic polymer,
with from about 4% to about 55% of a rubbery polymeric component;
[and,]
with from about 4% to about 55% of a reinforcing filler[;] until said
portions form a flowable mixture; and
[and injecting] feeding said mixture into a mold having at least one side wall, said mixture at least partially fill[s]ing said mold [about said side wall], such that said mixture has at least one side surface [along said side wall] and an interior portion.

14. (Once Amended) A polymeric composite for usage in molding applications comprising:

a thermoplastic polymer component comprising recycled polyolefin, recycled copolymers thereof or combinations thereof[;] and comprising about 25% to about 55% of said composite;

a recycled rubbery polymeric component comprising about 4% to about 55% of said composite;[and,]

a recycled reinforcing filler component[.] comprising about 4% to about 55% of said composite; and

a foaming agent comprising less than 1% of said composite.

15. (Once Amended) A molded member for use as a railroad tie, lumber or other structural member, comprising:

a mixture of

from about [4%] 25% to about 55% of a thermoplastic polymer[,];

from about 4% to about 55% of a rubbery polymeric component; [and,]

from about 4% to about 55% of a reinforcing filler; and

wherein said member is rotated at least once during cooling.

[wherein said member has at least one textured surface, whereby the said textured surface is applied by a press.]

16. (Once Amended) A process for forming a member having a plurality of surfaces, for use as a railroad tie, lumber or other structural member, comprising the steps of:

mixing,

[from] about [4%] 25% to about 55% of a thermoplastic polymer[,];

[from] about 4% to about 55% of a rubbery polymeric component; [and],

[from] about 4% to about 55% of a reinforcing filler;

injecting said mixture into a mold having at least one [side] wall, wherein said mixture at least partially fills said mold about said [side] wall, such that said mixture has at least one side surface along said [side] wall and an interior portion;

cooling said mixture whereby said at least one [side] surface is at least partially hardened thereby at least partially forming a member;

removing said [mixture] member from said mold before said interior portion [of said

mixture] is substantially hardened;

placing said [mixture] member about a cooling apparatus

rotating said [mixture] member about said cooling apparatus whereby said interior [mixture] is at least substantially hardened [forming said member]; and

[applying a textured surface to] texturing at least one surface of said member.

17. (Once Amended) A process for forming a member having a plurality of surfaces and at least one textured surface, for use as a railroad tie, lumber or other structural member, comprising the steps of:

[molding said member from] preparing a mixture of:

[from] about [4%]~~25%~~ to about 55% of a thermoplastic polymer,

[from] about 4% to about 55% of a rubbery polymeric component; [and],

[from] about 4% to about 55% of a reinforcing filler; [and]

forming a member by molding; and

texturing at least one surface of said member.

18. (Added) An apparatus comprising:

a mold having at least one side wall defining an interior portion and an opening
whereby material may fed into said mold;

a member in sealable connection about said interior portion;

wherein member is capable of moving along said interior portion of said mold
whereby said member may adjustably control a density of said extrudable material.

19. (Added) The apparatus of Claim 18, wherein said controlling member
comprises a back pressure piston.

20. (Added) The apparatus of Claim 18, wherein said member that adjustably
controls a density comprises a piston.

21. (Added) The apparatus of Claim 20, wherein said member further comprises at
least one gear and/or at least one brake.

22. (Added) The apparatus of Claim 20, further comprising a mechanical valve to shut off the flow of said material.

23. (Added) The apparatus of Claim 22, further comprising a tail stop and/or sensor to indicate when said valve should shut.

24. (Added) The apparatus of Claim 18, further having a mold with at least one end, wherein said mold further comprises a rod on or about said at least one end.

25. (Added) The apparatus of Claim 24, wherein said end and rod are pushed outwardly as the mold fills and the rod is detected by the sensor when said mold is filled.

26. (Added) The apparatus of Claim 18, further comprising a means to shut off the flow of said injected material when said mold is filled or substantially filled and a means to divert said material to another mold that is not filled.

27. (Added) The apparatus of Claim 26, wherein said means comprises a diverter valve.

28. (Added) The apparatus of Claim 27, wherein said means further comprises a first diverter station and a second diverter station.

29. (Added) The process of Claim 13, further comprising the step of using a Banbury mixer or other open chamber mixer to mix said mixture.

30. (Added) The process of Claim 13, further comprising the step of using a valve to feed said mixture into said mold.

31. (Added) The process of Claim 29, further comprising the step of using an extruder between said Banbury mixer or other open chamber mixer and said valve to

transport said mixture to said valve.

32. (Added) The process of Claim 13, further comprising the step of using a plurality of molds to form a plurality of members.

33. (Added) The process of Claim 31, further comprising the step of adjustably controlling a density of said extrudable material.

34. (Added) The process of Claim 33, wherein at least one brake and/or at least one gear is used to control said density.

35. (Added) The process of Claim 13, further comprising the step of using a plurality of molds and filling at least one mold at a time.

36. (Added) The apparatus of Claim 35, further comprising the step of using a first diverter station and a second diverter station to fill at least one mold at a time.

37. (Added) The process of Claim 13, further comprising the step of cooling said mixture whereby said at least one side surface is at least partially hardened thereby at least partially forming a member.

38. (Added) The process of Claim 13, further comprising the step of closing the mold after it is filled.

39. (Added) The process of Claim 38, further comprising the step of placing the closed mold in a waterbath during cooling.

40. (Added) The process of Claim 39, further comprising the step of: removing said member from said mold before said interior portion is hardened.

41. (Added) The process of Claim 40, further comprising the steps of:

placing said member within or about a cooling apparatus; and
rotating said member about said cooling apparatus until said interior of said member
is at least substantially hardened and/or cooled.

42. (Added) The process of Claim 41, further comprising the step of: texturing at
least one surface of said member.

43. (Added) The member of Claim 15, wherein said rotation prevents said
member from warping during cooling

44. (Added) The member of Claim 15, wherein said member has at least one
textured surface, whereby said textured surface is applied by a press.

45. (Added) The member of Claim 44, wherein said member is a tie having at
least one textured surface with indentations at least 1/8" deep.

46. (Added) The member of Claim 44, wherein said member is a tie having a
textured surface with indentations that provide surfaces perpendicular to the longitudinal axis
of the tie.

47. (Added) The member of Claim 44, wherein said member is a tie having a
textured surface with indentations at least 1/4" wide, but less than 6" wide.

48. (Added) The member of Claim 44, wherein said member is a tie having a
textured surface and wherein the pattern provides corners or holes to capture and hold
individual pieces of ballast.

49. (Added) The member of Claim 47, wherein said member is a tie having a
textured surface and wherein said indentations provide resistance to force across at least 10%
of said tie surface.

50. (Added) The composite of Claim 14, wherein a Banbury mixer or other open chamber mixer is used to mix said composite

51. (Added) The apparatus of Claim 12, wherein said member that adjustably controls a density of said extrudable material comprises a piston.

52 (Added) The apparatus of Claim 51, wherein said member that adjustably controls a density of said extrudable material further comprises at least one gear and at least one brake.

53. (Added) The apparatus of Claim 12, further comprising:
a means to shut off the flow of said injected material when said mold is filled or substantially filled.

54. (Added) The apparatus of Claim 53, wherein said means comprises a mechanical valve.

55. (Added) An apparatus for making a molded member comprising:
a Banbury mixer or other open chamber mixer for mixing materials;
at least one mold that has sides and ends that can be closed;
an extruder for filling said mold with said mixed material;
a member that adjustably controls a density of said material as the mold is filled;
a valve to shut off the flow of said mixed material when said mold is filled;
a tail stop and/or sensor to indicate when said valve should shut; and
a water bath for cooling said mold or molds.

56. (Added) The apparatus of Claim 55, further comprising:
a plurality of molds.

57. (Added) The apparatus of Claim 55, further comprising a means to shut off the flow of said injected material when at least on mold is filled or substantially filled and a

means to divert said material to a mold that is not filled.

58. (Added) The apparatus of Claim 55, wherein said means comprises a diverter valve.

59. (Added) The apparatus of Claim 58, wherein said means further comprises a first diverter station and a second diverter station.

60. (Added) The apparatus of Claim 55, wherein said mold further comprises a rod which extends from one end of said mold and is pushed outwardly as said mold is filled.

61. (Added) The apparatus of Claim 60, wherein said rod is detected by a sensor when said mold is full.

62. (Added) The apparatus of Claim 61, wherein said sensor causes the mold to close.

63. (Added) The apparatus of Claim 62, further having means to put the mold into the water bath and means to take the mold out of the waterbath.

64. (Added) The apparatus of Claim 60, having means to push said rod inwardly and push the member out of the mold after said member is formed.

65. (Added) The apparatus of Claim 66, further comprising a cooling rack.

66. (Added) The apparatus of Claim 65, further comprising a texturing member.

67. (Added) The apparatus of Claim 55, wherein said controlling member comprises at least one gear and at least one brake.